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RAILROAD COMMISSION OF TEXAS

OIL AND GAS DIVISION

September 28, 2015

MR. MIKE FRAZIER
GROUND WATER/UIC SECTION (6WQ-SG)
U. S. ENVIRONMENTAL PROTECTION AGENCY
1445 ROSS AVE
DALLAS TX 75202-2733

RE: FY 2015 UIC ANNUAL NARRATIVE

Dear Mr. Frazier,

Attached is the Railroad Commission's Annual Narrative Report for its Underground Injection Control activities during the state fiscal year 2015.

We will be glad to discuss any of the Annual Narrative items. Please call me at (512) 463-3011 or email david.hill@rrc.texas.gov if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "David Hill".

David Hill, P.E., P.G.
Manager for Injection-Storage
Permits and Support

DH/sam

Attachments

ANNUAL NARRATIVE OF UIC ACTIVITIES FOR STATE FY 2015

The following is a description of the Railroad Commission's activities and accomplishments in administering the Underground Injection Program for Class II injection wells, hydrocarbon storage wells, and Class III brine mining wells in the state fiscal year 2015.

The Railroad Commission processed 53,895 annual reporting forms (Form H-10) for disposal/injection wells and 445 annual reporting forms (Form H-10H) for hydrocarbon storage and brine mining wells. The inventory of UIC wells was 56,330 at the end of FY 2015.

In FY 2015, staff received and reviewed 19,069 reports for mechanical integrity pressure tests of disposal/injection wells. The operators reported RRC inspectors witnessed 6,444 (34%) of the integrity tests. However, the district offices reported inspectors witnessed 7,140 mechanical integrity tests of 19,069 tests (37%) that operators performed. The Railroad Commission continues to enforce the requirement of filing test reports for wells that failed the mechanical integrity test. The district offices inspections of credible wellhead monitoring to obtain tubing-casing annulus credit (TCAM) resulted in 40 additional district office inspections for extension to MIT testing in FY 2015.

Due to cost and scheduling constraints the effort to upgrade the H-5 processing to an 'on-line' H-5 scheduling and filing system has been rescheduled. However, with the additional staffing, the Mechanical Integrity Tests are being processed immediately. Once processed, the imaged Form H-5 is instantly available for viewing online.

An additional 81 injection/disposal wells had radioactive tracer surveys or temperature surveys performed and reported instead of pressure tests. Operators also performed mechanical integrity tests on 95 hydrocarbon storage wells and 33 brine-mining wells.

The Railroad Commission's district offices reported 22,255 routine inspections of injection, disposal, and storage wells in FY 2015. The district offices continue to maintain a high level of activity in support of the Underground Injection Control program.

The Railroad Commission received 2,327 applications for 2,671 disposal/injection wells. In FY 2015, the Commission issued 2,183 permits for 2,599 wells. UIC staff sent 230 applications to Docket Services for resolution by public hearing. The Railroad Commission received 19 applications for 41 brine-mining wells, and issued 12 new permits for 34 wells and 5 amended permits for 6 wells in FY 2015. The Commission received no new applications and 6 expansion applications for a total of 32 hydrocarbon storage wells, and issued 4 amended permits for 8 wells. The Commission received 3 new applications and 1 amended application for salt cavern disposal wells in FY 2015. Additionally, there were 2 new and 3 amended cap rock injection permits issued in FY 2015.

The East Texas Field is the only area in which Rule 46 UIC wells are permitted without the benefit of an AOR review. For FY 2015, there were 8 new and 3 amended non-commercial injection wells permitted without an Area of Review. Commercial disposal wells in the East Texas field are subject to the AOR requirement and special permit conditions that include open-hole logs to verify formation tops, cement bond logs to confirm formation isolation, and

radioactive tracer surveys to ensure continued injection confinement. These permit conditions are now standard with all operations witnessed by District Office staff. For FY 2015, there were no commercial disposal wells permitted within the East Texas field footprint.

The Railroad Commission maintains more stringent permitting criteria for disposal wells in the Fort Worth Basin and other areas of Texas experiencing similar development trends. Applicants for commercial disposal of any amount and/or lease disposal over 5000 bbls per day who wish to inject above the Barnett Shale Formation in the Barnett Shale trend area are to provide pressure influence information demonstrating that the injected fluids will be confined to the injection interval. In FY 2015, the RRC received no applications for injection above the Ellenburger Formation. Permitted injection below the Barnett Shale Formation, in the Ellenburger Formation, must be at least 250 feet below the top of the Ellenburger Formation, and is restricted to a maximum of 25,000 barrels per day. In FY 2015, there were 1 new and 1 amended applications received for injection below the Ellenburger Formation which are subject to these requirements.

Portions of the Brown Dolomite in the Texas Panhandle region is also an area of potential concern and the Commission has imposed special conditions that require some operators to obtain a bottom hole pressure (BHP) measurement when certain wells are subject to annual mechanical integrity testing.

The UIC staff has continued to study effects of a large increase in oil and gas waste disposal operations in the Rodessa formation of the tri-county area of Harrison, Panola, and Shelby Counties of east Texas related to development of the Haynesville Shale. In FY 2015, 8 new permits were granted with the BHP special condition. The test results will be submitted to and reviewed by UIC staff.

The Railroad Commission continued to perform reviews for operator compliance with well completion and operation requirements at a significant rate. In FY 2015, UIC staff performed 37,394 compliance reviews. Enforcement actions totaled 7,841 for injection/disposal wells. Most of the actions were notices of violation for failure to timely file the annual reporting forms (4,592) or to conduct a pressure test within the time period scheduled by the commission (3,206). Commission staff also sent violation notices for 5 operating violations, primarily for operating in an unauthorized zone. Operators brought most wells into compliance as directed by the violation notice letters, which precluded the need for stronger enforcement actions. In FY 2015, the Commission issued seal orders for 113 disposal/injection wells and severed pipeline connections on 693 leases due to delinquent annual reporting forms and failure to conduct their required pressure tests.

The Form H-10 online filing system has continued to increase the availability of injection and disposal volumes for public as well as internal queries. It has also continued to increase the number of annual reviews of UIC permit compliance according to information submitted on each H-10 form. The H-10 online system initiated the review and subsequent mailing of 853 permit violation letters representing 2,517 violations for 1,804 wells in FY 2015. Follow-up enforcement for these violation letters in the form of seal and pipeline severance orders numbered 50.

The Commissioners signed 13 consent agreements and administrative orders for enforcement actions under Rule 46 (10 actions), Rule 9 (2 actions), and Rule 81 (1 action). Enforcement actions initiated by Railroad Commission staff recovered \$438,788.00 for violations associated with injection, disposal, and brine mining wells. In FY 2015 there were 745 UIC seal orders and pipeline severances resulting in \$558,750.00 lease reconnection fees.

In January 2015, UIC staff attended, and senior staff presented talks on groundwater protection topics at the annual GWPC Conference held in Austin. Senior staff traveled to Philadelphia in April 2015 for the EPA UIC Training. In July 2015, RRC staff conducted a Seminar in Austin for continued operator training. In FY 2015 the technical staff has continued to enhance their knowledge by visiting operator sites in order to help them perform their tasks more proficiently. These field trips include observing drilling operations, hydraulic fracturing operations, mechanical integrity testing, and viewing salt dome facilities. Railroad Commission staff is still considering possible future amendments to Statewide Rules 9 and 46 to incorporate current requirements, clarify language, update references, and add new requirements.

Effective November 2014, Statewide Rule 9 and 46 were amended requiring operators to provide information from the United States Geological Survey (USGS) regarding the locations of any historical seismic events within a circular area of 100 square miles centered around the proposed disposal well location. This applies to all new disposal wells and similar amendment applications where pressure, volume, or interval changes are requested.

As of December 2014, the new public GIS Map Viewer was launched to provide navigation capabilities by surveys, lease ID's, and pipeline permits. All of these modifications aid the permitting staff in ensuring that all well types are considered when reviewing permits. It also enhances the reviewer's ability to consider public interest issues within protested permit applications. The enhanced GIS Viewer continues to reinforce the Commission's desire to provide service to both the public and industry.

The Commission's online system for filing and processing Completion Reports for Oil, Gas, and Injection wells (Forms W-2/G-1) has tracked approximately 3,172 completion packets for injection/disposal wells through the online system this fiscal year.

The RRC continues to improve the efficiency and effectiveness of its Class II program through the digitization of UIC well mechanical integrity test reports (Form H-5). With the EPA's Special Grant awarded for FY 2016 the Commission will continue the digitization of MIT files on a day forward basis.

The EPA's Special Grant awarded for FY 2016 will enable the continued digitization of day forward injection and disposal permits. The Commission continues to work toward finalization of the agreement with the EPA to exchange Underground Injection Control (UIC) program data through the National Exchange Network.

The Railroad Commission continues to actively participate in UIC and other ground water protection issues that involve activities external to the Commission, including the Texas Groundwater Protection Committee (TGPC).